

What is claimed is:

1. An audio speaker connection block for speakers having a first voice coil and a second voice coil, each voice coil having a first lead and a second lead, both voice coils to be driven by a single audio signal source or each voice coil to be driven by a different audio signal source, each audio signal source presenting an audio signal between two audio signal terminals, said connection block comprising:

first, second, third and fourth electrical conductors;

a housing to retain said first, second, third and fourth electrical conductors in fixed positions with respect to each other;

a voice coil terminal attached to each of said first, second, third and fourth electrical conductors, each voice coil terminal disposed to receive only one lead of one of said voice coils with said voice coil terminal attached to said first electrical conductor disposed to receive said first lead of said first voice coil of a first polarity, said voice coil terminal attached to said second electrical conductor disposed to receive said first lead of said second voice coil of said first polarity, said voice coil terminal attached to said third electrical conductor disposed to receive said second lead of said first voice coil of a second polarity, and said voice coil terminal attached to said fourth electrical conductor disposed to receive said second lead of said second voice coil of said second polarity; and

an audio signal input terminal attached to each of said first, second, third and fourth electrical conductors, each disposed to have attached thereto no more than one different audio signal terminal.

2. The audio speaker connection block as in claim 1 wherein said second electrical conductor is spaced apart a selected distance from said first electrical conductor, said third electrical conductor is spaced apart said selected distance from said second electrical conductor, and said fourth electrical conductor is spaced apart said selected distance from said third electrical conductor.

3. The audio speaker connection block of claim 1 wherein said first, second, third and fourth electrical conductors are retained by said housing parallel to each other with a space between each adjacent electrical conductors.

4. The audio speaker connection block of claim 3 wherein said space between each pair of adjacent electrical conductors is substantially the same width.

5. The audio speaker connection block of claim 4 wherein said second electrical conductor is spaced apart from said first electrical conductor, said third electrical conductor is spaced apart from said second electrical conductor, and said fourth electrical conductor is spaced apart from said third electrical conductor.

6. The audio speaker connection block of claim 2:  
wherein said housing defines a substantially linear opening there across exposing a portion of each of said first, second, third and fourth electrical conductors; and  
further comprising at least one electrically conductive jumper having a length that is only long enough to electrically interconnect two adjacent ones of said first, second, third and fourth electrical conductors when selectively inserted into said linear opening of said housing.

7. The audio speaker connection block of claim 6 wherein said at least one electrically conductive jumper is a fuse.

8. The audio speaker connection block as in claim 1 wherein when each voice coil is to be driven by a different audio signal source, said audio signal input terminal of said first electrical conductor is disposed to have connected thereto an audio signal terminal of said first polarity of a first audio signal source, said audio signal input terminal of said second electrical conductor is disposed to have connected thereto an audio signal terminal of said first polarity of a second audio signal source, said audio

signal input terminal of said third electrical conductor is disposed to have connected thereto an audio signal terminal of a second polarity of said first audio signal source, and said audio signal input terminal of said fourth electrical conductor is disposed to have connected thereto an audio signal terminal of said second polarity of said second audio signal source.

9. The audio speaker connection block as in claim 6 wherein a series connection of said first and second voice coils is to be driven by a single audio signal source, said audio signal input terminal of said first electrical conductor is disposed to have connected thereto an audio signal terminal of said first polarity of said single audio signal source, said audio signal input terminal of said fourth electrical conductor is disposed to have connected thereto an audio signal terminal of said second polarity of said single audio signal source, and a jumper inserted in said housing linear opening in electrical contact with said second and third electrical conductors to interconnect said first polarity lead of said second voice coil with said second polarity lead of said first voice coil.

10. The audio speaker connection block as in claim 6 wherein a parallel connection of said first and second voice coils is to be driven by a single audio signal source, said audio signal input terminal of said first electrical conductor is disposed to have connected thereto an audio signal terminal of said first polarity of said single audio signal source, said audio signal input terminal of said fourth electrical conductor is disposed to have connected thereto an audio signal terminal of said second polarity of said single audio signal source, a first jumper inserted in said housing linear opening in electrical contact with said first and second electrical conductors to interconnect said first polarity lead of each of said first and second voice coils, and a second jumper inserted in said housing linear opening in electrical contact with said third and fourth electrical conductors to interconnect said second polarity lead of each of said first and second voice coils.

11. An audio speaker comprising:

a basket;

a cone;

an audio motor including a voice coil bobbin attached to said cone and having a first voice coil and a second voice coil wound thereon, and each voice coil has a first lead and a second lead; and

a speaker connection block mounted on said basket, said speaker connection block including:

first, second, third and fourth electrical conductors;

a housing to retain said first, second, third and fourth electrical conductors in fixed positions with respect to each other;

a voice coil terminal attached to each of said first, second, third and fourth electrical conductors, with each voice coil terminal having attached thereto only one lead of one of said voice coils with said first lead of said first voice coil attached to said voice coil terminal attached to said first electrical conductor, said first lead of said second voice coil attached to said voice coil terminal attached to said second electrical conductor, said second lead of said first voice coil attached to said voice coil terminal attached to said third electrical conductor, and said second lead of said second voice coil attached to said voice coil terminal attached to said fourth electrical conductor; and

an audio signal input terminal attached to each of said first, second, third and fourth electrical conductors, each disposed to have attached thereto a different audio signal terminal.

12. The audio speaker as in claim 11 wherein said second electrical conductor is spaced apart a selected distance from said first electrical conductor, said third electrical conductor is spaced apart said selected distance from said second electrical conductor, and said fourth electrical conductor is spaced apart said selected distance

from said third electrical conductor.

13. The audio speaker of claim 11 wherein said first, second, third and fourth electrical conductors are retained by said housing parallel to each other with a space between each adjacent electrical conductors.

14. The audio speaker of claim 13 wherein said space between each pair of adjacent electrical conductors is substantially the same width.

15. The audio speaker of claim 14 wherein said second electrical conductor is spaced apart from said first electrical conductor, said third electrical conductor is spaced apart from said second electrical conductor, and said fourth electrical conductor is spaced apart from said third electrical conductor.

16. The audio speaker of claim 12:  
wherein said housing defines a substantially linear opening there across exposing a portion of each of said first, second, third and fourth electrical conductors; and  
further comprising at least one electrically conductive jumper having a length that is only long enough to electrically interconnect two adjacent ones of said first, second, third and fourth electrical conductors when selectively inserted into said linear opening of said housing.

17. The audio speaker of claim 16 wherein said at least one electrically conductive jumper is a fuse.

18. The audio speaker connection block as in claim 11 wherein when each voice coil is to be driven by a different audio signal source, said audio signal input terminal of said first electrical conductor is disposed to have connected thereto an audio signal terminal of said first polarity of a first audio signal source, said audio signal input

terminal of said second electrical conductor is disposed to have connected thereto an audio signal terminal of said first polarity of a second audio signal source, said audio signal input terminal of said third electrical conductor is disposed to have connected thereto an audio signal terminal of a second polarity of said first audio signal source, and said audio signal input terminal of said fourth electrical conductor is disposed to have connected thereto an audio signal terminal of said second polarity of said second audio signal source.

19. The audio speaker connection block as in claim 16 wherein a series connection of said first and second voice coils is to be driven by a single audio signal source, said audio signal input terminal of said first electrical conductor is disposed to have connected thereto an audio signal terminal of said first polarity of said single audio signal source, said audio signal input terminal of said fourth electrical conductor is disposed to have connected thereto an audio signal terminal of said second polarity of said single audio signal source, and a jumper inserted in said housing linear opening in electrical contact with said second and third electrical conductors to interconnect said first polarity lead of said second voice coil with said second polarity lead of said first voice coil.

20. The audio speaker connection block as in claim 16 wherein a parallel connection of said first and second voice coils is to be driven by a single audio signal source, said audio signal input terminal of said first electrical conductor is disposed to have connected thereto an audio signal terminal of said first polarity of said single audio signal source, said audio signal input terminal of said fourth electrical conductor is disposed to have connected thereto an audio signal terminal of said second polarity of said single audio signal source, a first jumper inserted in said housing linear opening in electrical contact with said first and second electrical conductors to interconnect said first polarity lead of each of said first and second voice coils, and a second jumper inserted in said housing linear opening in electrical contact with said third and fourth

electrical conductors to interconnect said second polarity lead of each of said first and second voice coils.

21. A method for interconnecting first and second voice coils wound on a voice coil bobbin of an audio speaker, said first and second coils to be driven by a single audio signal source or each of said first and second voice coils to be driven by a different audio signal source, each voice coil having a first lead and a second lead, each audio signal source presenting an audio signal between two audio signal terminals, said method comprising the steps of:

- a. mounting first, second, third and fourth electrical conductors on said audio speaker;
- b. retaining said first, second, third and fourth electrical conductors in fixed positions with respect to each other;
- c. attaching said first lead of said first voice coil to said first electrical conductor, said first lead of said second voice coil to said second electrical conductor, said second lead of said first voice coil to said third electrical conductor, and said second lead of said second voice coil to said fourth electrical conductor; and
- d. disposing each of said first, second, third and fourth electrical conductors to have attached thereto a different audio signal terminal.

22. The method of claim 21 wherein step b. includes the step of:

- e. spacing said second electrical conductor apart a selected distance from said first electrical conductor, said third electrical conductor apart said selected distance from said second electrical conductor, and said fourth electrical conductor apart said selected distance from said third electrical conductor.

23. The method of claim 21 wherein step b. includes the step of:

- e. retaining said first, second, third and fourth electrical conductors parallel to each other with a space between each adjacent electrical conductors.

24. The method of claim 23 wherein said space between each pair of adjacent electrical conductors is substantially the same width.

25. The method of claim 24 wherein said second electrical conductor is spaced apart from said first electrical conductor, said third electrical conductor is spaced apart from said second electrical conductor, and said fourth electrical conductor is spaced apart from said third electrical conductor.

26. The method of claim 21 further including the step of:

e. connecting an audio signal terminal of said first polarity of a first audio signal source to said electrical conductor, an audio signal terminal of said first polarity of a second audio signal source to said second electrical conductor, an audio signal terminal of a second polarity of said first audio signal source to said third electrical conductor, and an audio signal terminal of said second polarity of said second audio signal source to said fourth electrical conductor to interconnect said first voice coil to said first audio signal source and said second voice coil to said second audio source.

27. The method of claim 22:

wherein step b. retains said first, second, third and fourth electrical conductors in a housing affixed to said audio speaker;

said method further includes the step of:

f. defining a substantially linear opening across said housing exposing a portion of each of said first, second, third and fourth electrical conductors.

28. The method of claim 27 further comprising the step of:

g. inserting an electrically conductive jumper into said substantially linear opening to electrically interconnect two adjacent ones of said first, second, third and fourth electrical conductors.



29. The method of claim 28 wherein said electrically conductive jumper is a fuse.

30. The method of 28:

the method further includes the step of:

h. connecting an audio signal terminal of said first polarity of said single audio signal source to said first electrical conductor, and an audio signal terminal of said second polarity of said single audio signal source to said fourth electrical conductor; and

wherein the jumper of step g. is inserted in electrical contact with said second and third electrical conductors to interconnect said first polarity lead of said second voice coil with said second polarity lead of said first voice coil thus providing a series connection of said first and second voice coils to be driven by said single audio signal source.

31. The method of claim 27 further includes the steps of:

g. inserting a first electrically conductive jumper into said substantially linear opening to electrically interconnect said first and second electrical conductors;

h. inserting a second electrically conductive jumper into said substantially linear opening to electrically interconnect said third and fourth electrical conductors; and

i. connecting an audio signal terminal of said first polarity of said single audio signal source to said first electrical conductor, and an audio signal terminal of said second polarity of said single audio signal source to said fourth electrical conductor;

wherein said first and second voice coils are connected in parallel and driven by a single audio signal source.